

REMARKS

The Office Action dated December 4, 2003 has been reviewed carefully and the application has been amended in a sincere effort to place the claims in condition for allowance.

Claim Rejections - 35 U.S.C. § 112

Claim 11 was objected to due to a typographical error. This has been corrected herein.

Claims 3-4 and 7, and 8-10 and 26 were rejected under 35 U.S.C. § 112 for failing to particularly point out and distinctly claim the subject matter of the invention.

Claim 3 was objected to on the basis that the data packet is indicated that the pseudo-header is located within a data field as stated in claim 1. However, this limitation has been removed from claim 1.

The Examiner objected to the language "the protocol data field" in claim 8. The claim has been clarified to refer to "the data field".

Claim 10 has been objected to on the basis that it requires that "an additional checking step is performed" however there is not a previous checking step. Accordingly, the word "additional" has been deleted from claim 10.

With respect to claim 26, Applicant has amended claim 26 to include the language suggested by the Examiner.

Claims 8 and 10 were further objected to on the basis that there is no support for placing a pseudo-header after the protocol header, but before the data field. As illustrated in Fig. 3, the data 312 as it resides in the application layer 310 may be in one particular field, but as it proceeds through the transport layer and the network layer, for example, it may be broken into separate data fields 326. The protocol header, as illustrated in Fig. 3, is defined by reference character 332. The pseudo-header of the present invention may be implemented as part of the header identified by reference character 322. Specifically, at the bottom of page 18 of the Specification, beginning at line 17, the header 322 is described and it contains the psuedo-header of the present invention as illustrated in Fig. 7. This header 322 can be located between the protocol header 332 and the data field 326 as illustrated in the datagram of the network layer of Fig. 3, for example. Thus, it is respectfully submitted that there is support for the cited limitation in claims 8 and 10.

Claim Rejections - 35 U.S.C. § 103

Claims 1-7 and 18-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 6,625,147 to Yokoyama *et al.* ("Yokoyama") in view of United States Patent No. 6,590,903 to Hofers *et al.* ("Hofers").

Briefly, Applicant's invention is system for generating and processing data packets that enable a communication device having limited memory to participate in network protocol processing. In accordance with the invention, a communicating device format packets in accordance with one or more communication protocols by in-

cluding one or more constraints and transmits this packet to another communication device. The other communication device performs a specified processing of the received packet and generates a reply that conforms to one of the communication protocols and satisfies formatting constraints but does not require additional memory capacity or additional hardware in doing so. As stated in the Specification at page 8, beginning at line 6:

Systems and methods consistent with the present invention permit communication devices of limited capacities, such as those with very restricted memory resources that are unable to store the large number of instructions, or are unable to contain the large logic circuitry, required for performing procedures in accordance with two or more protocols, to process and respond to packets in accordance with network protocols. Network peers may facilitate this by formatting the packets generated in accordance with one protocol, subject to one or more additional formatting constraints in accordance with the invention.

Applicant's invention is directed, *inter alia*, to generating packets that include a pseudo-header, which in turn includes constraints that are additional to the constraints of the protocol being used. In this way, information about a second protocol (or further information about the first protocol) can be embedded within the subfields of the pseudo-header. Some examples of the types of information that can be embedded in the subfields are stated in the Specification at page 20 concerning the discussion of pseudo-header fields 710-760. As noted on page 21, the communication device may extract from a packet the pseudo-header from the data field and perform procedures based on

the content of the pseudo-header fields. Thus, the system can be given instructions about additional procedures using the content of the packets rather than instructions that would have to otherwise be stored in a separate memory storage device. This is particularly advantageous in devices in which a limited memory capacity exists. In addition, although additional circuitry can be used to implement the instructions or processes consistent with the invention, additional hardware is not required.

In contrast, Yokoyama describes a communications network control system that includes a judging unit for judging whether a packet that is received from a first network is either a control packet that contains control information or whether it is a transfer packet addressed otherwise. It does not discuss generating packets and including a pseudo-header with additional constraints. More specifically, Yokoyama describes a communications control network for sending packetized information from one communications network to another communications network. A first managing unit receives a control packet (after it is determined to be a control packet) via a communications medium and it has applications for managing and processing the control information based upon the packet. A second managing unit is used for storing the control information transmitted to the communications medium. A rewriting unit executes a process of rewriting the contents of the packet in accordance with the control information stored in the second unit (Yokoyama, column 2, lines 34-54), so that it is ready to be transferred to the second network. As noted, Yokoyama specifically requires storing the control information. This teaches away from Applicant's invention.

Specifically, Applicant's invention is providing solutions where memory storage capacity is limited and thus provides packets that include additional constraints that are tantamount to additional instructions being embedded within the packet itself that further can be implemented without otherwise requiring the use of storing and retrieving routing and control information from additional memory resources.

Moreover, Yokoyama describes a rewriting unit, but this “rewriting” unit rewrites the control information for routing a transfer packet pursuant to internet protocol (IP), so that the contents of the transfer packet are ready to be sent to a second network. Yokoyama does not disclose providing “additional” constraints or information in the packet that function as additional instructions for procedures related to the same or a different protocol. Furthermore, new claims 27 and 29 indicate that the format does not require additional memory resources, for example. Claim 11 has been amended to recite that additional memory resources are not required. In Yokoyama, the information necessary to for specifying a transmission route has to be stored in an associated routing table. (Col. 9, lines 26 – 35, Yokoyama). The Yokoyama reference teaches a system that needs to store the control information for the transfer packets, and thus is not providing or suggesting solutions for packetized information that include control information that does not have to be stored, thus saving memory resources. Therefore, Yokoyama alone does not disclose, teach or suggest the Applicant's invention as claimed in claims 1-7 and 18-26.

Hofers is cited for the fact that it is known to carry protocol conversion data within a data field. Applicant is not merely converting control information issued in one protocol into another protocol. Instead, Applicant is virtually expanding the capacity of the system by embedding the instructions for carrying out procedures for a second protocol (or additional procedures as to the first protocol) by sending those instructions as constraints within a psuedo-header of the packets being generated in accordance with the invention. Although Hofers mentions that one of the objects of the invention is to reduce computing capacity requirements, Hofers does not suggest providing "additional constraints" in the nature of further procedures pursuant to a protocol within the packets. Hofers merely states that protocol data can be assigned to a data frame. Thus, Hofers alone does not render Applicant's invention, as claimed in claim 1-7 and 18-26 obvious.

Furthermore, the combination of Yokoyama and Hofers still does not give rise to Applicant's invention because Yokoyama, though it describes rewriting packets, it does not teach generating packets with psuedo-headers that include additional constraints which function as a way of embedding additional procedures regarding a certain protocol within a packet, and without requiring additional memory resources. Hofers does not discuss including additional constraints that comprise procedures for control pursuant to a protocol, but instead simply indicates that protocol data can be assigned into a particular data frame. Thus, the combination does not give rise to Applicant's invention as claimed. In addition, the combination of Yokoyama and Hofers does not

render obvious Applicant's solutions regarding the memory storage capacity problem as recited in the amended independent claims and the claims dependent therefrom.

Claims 8-17 were rejected under 35 U.S.C. § 103 as being obvious over Yokoyama.

Claim 8 has been amended to specifically refer to the additional constraints for satisfying requirements for procedures to implement an additional aspect of protocol. As noted above, Yokoyama does not disclose, teach or suggest such a solution at all. Claim 11 has been amended to indicate that the computer readable medium does not require additional memory storage capacity. As noted by the Examiner, memory is not specifically mentioned in Yokoyama. Therefore, in view of the amendments to the independent claims, Applicant respectfully submits that claims 8-17 are not obvious in view of Yokoyama.

Claims 1, 8, 11 and 21 were rejected under 35 U.S.C. § 103 as being obvious over Hofers in view of Applicant's admitted prior art.

The Examiner indicates that with regard to claims 1 and 21, Hofers teaches a protocol conversion using the pseudo-header comprised of information within a frame. Even if this is combined with the use of a reply packet or a validity check, Hofers protocol data contained within the data field does not render obvious Applicant's pseudo-header fields that provide for additional constraints as discussed. In fact, Hofers does not mention anything about additional constraints to a protocol, but is simply discussing


the conversion of asynchronous data to a synchronous data stream, and then reconvert-
ing to a synchronous continuous data stream.

Summary

All of the claims have been amended herein, either directly or through depend-
ency. It is respectfully submitted that the claims are distinguishable over the cited prior
art and are now in condition for allowance. Please do not hesitate to contact the under-
signed in order to advance the prosecution of this application in any respect.

Please charge any additional fee occasioned by this paper to our Deposit Account
No. 03-1237.

Respectfully submitted,



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